KILL RATS—STOP IMMENSE DAMAGE

(Prepared by the United States Department of Agriculture.)

The rat is the worst animal pest in the world.

From its home among filth it visits dwellings and storerooms to pollute and destroy human food.

It carries bubonic plague and many other diseases fatal to man and has been responsible for more untimely deaths among human beings than all the wars of history.

In the United States rats and mice each year destroy crops and other property valued at over $200,000,000.

This destruction is equivalent to the gross earnings of an army of over 200,000 men.

On many a farm, if the grain eaten and wasted by rats and mice could be sold, the proceeds would more than pay all the farmer's taxes.

The common brown rat breeds six to ten times a year and produces an average of ten young at a litter. Young females breed when only three or four months old.

At this rate a pair of rats, breeding uninterruptedly and without deaths, would at the end of three years (18 generations) be increased to 359,709,482 individuals.

For centuries the world has been fighting rats without organization and at the same time has been feeding them and building for them fortresses for concealment. If we are to fight them on equal terms we must deny them food and hiding places. We must organize and unite to rid communities of these pests. The time to begin is now.

UTILIZE WASTE LANDS

Patch-Work Farming Should Be Done Away With At Once.

No Better Time for Putting Things to Right Than Winter Months—Line of Tile Would Make Wet Hollow Productive.

It's time to do away for all time with the patch-work farming that is a reproach in so many sections, and replace it with broad, open, well ordered fields. When we see a farm with fence rows overgrown with briers and bushes, wet hollows that grow nothing but a crop of weeds, plum thickets and brier patches that alternate with gullied and galled hillsides, we know at once we've found a slovenly, unbusinesslike, unsuccessful farmer. Moreover, we suspect that his mental workings are like his fields—slovenly, patchy, ill-ordered, with no system or method. Such a man on such a farm is setting an example that is bad for his children and his community. Becoming accustomed to such things, they will become content with them.

There is no better time than the fall and winter months for putting these things to rights. There's many a wet hollow, worthless in its present shape, that a line of tile or a good open ditch will make one of the most productive pieces of land on the farm. Patches of bushes and briers, too, must go. They look bad, in the first place, and they occupy land that ought to be at work. Let's clean them up, beginning right away and sticking to the job until we are farming fields instead of patches.—The Progressive Farmer.

CHOLERA IS SERIOUS MENACE

Big Saving in Swine Industry May Be Made by Proper Feeding and Sanitary Measures.

Hog cholera is a preventable disease, yet it constitutes the most serious menace to successful swine raising. At the prevailing price of hogs and feedstuffs, time and money properly expended in sanitary measures by persons engaged in raising and fattening hogs will prevent the spread and development of hog cholera and thus result in a material saving to the swine industry.

ABUNDANT SUPPLY OF FEEDS

Full Corn Cribs and Smokehouses Mean Much to Farmers—Drought Reduces Crops.

Full smokehouses and corn cribs mean more to farmers now than ever before. While drought sometimes reduces crops and turns bright prospects into burned pastures and poor yield of crops it is our privilege to do our best to have plenty of meat and bread with an abundance of feed for our stock.

ABUSE OF FARM MACHINERY

One of Largest Losses to American Farmer Is Neglect of Implements—Can Be Prevented.

(By E. B. DORAN, Louisiana Experiment Station.)

One of the largest losses in American agriculture is caused by the misuse of farm machinery. Much of this loss can be prevented by proper care and watchfulness on the part of the operator. The self-binder is an agricultural machine that requires close attention. It is not so durable as some of the other farm implements for two reasons: First, it has a larger proportion of rapidly moving parts; and, second, it does not have large, heavy casting as a foundation or base, but is merely a light framework of steel rods, straps and angle pieces.

Gasoline engines, feed cutters, pumps and mowing machines have heavy cast-iron frames or foundations, which are lacking in the binder. This means that if the same return is to be had from money invested in a mowing machine it must be given unusual attention and must be protected from the weather and from careless operators. The braces must be properly secured and adjusted, the bearings must be in line, there must be no undue lost motion, the parts intended to be held in rigid alignment must be held that way, and moving parts must move freely.

The life of the average binder is not over four years, but some have lasted more than fifteen years, because they were cared for properly.

CARE FOR GROWING PORKERS

If Pigs Are Worth Producing They Are Worth Extra Care and Feed to Develop Them.

(By W. L. BLIZZARD, Department of Animal Husbandry, Oklahoma A. and M. College, Stillwater.)

In feeding those growing pigs, do not forget that the larger they grow the better. If they are worth producing, they are certainly worth the extra feed and care it takes to develop them. No man ever made anything by starving them, unless there was a lack of good blood. If he hasn't the good blood, the quicker he gets it the better. The old saying, "A good one is worth a pasture full of ordinary ones," is just as true today as it has always been.

If one hasn't the right kind, he should make a study of the business and grow the kind that makes money for the other fellow.

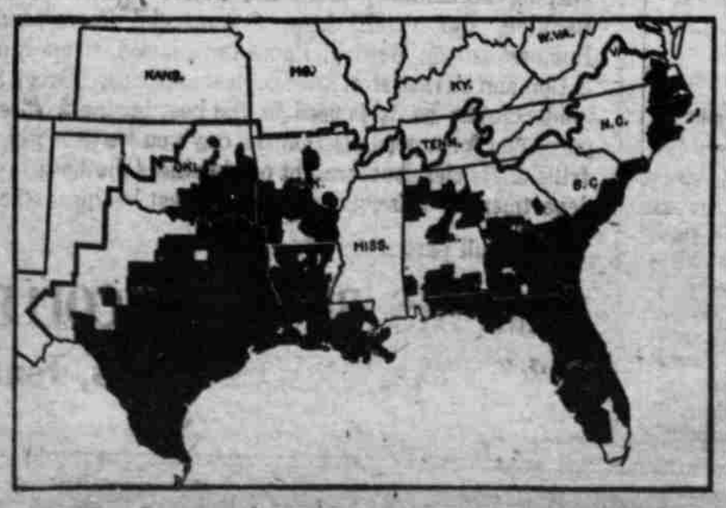
Many a livestock breeder stands in his own light because he doesn't produce the kind that his fellow breeder wants.

FEEDING THE YOUNG CALVES

Animals Will Begin to Nibble at Hay When Few Days Old If It Is Within Their Reach.

When only a few days of age calves will begin to nibble hay if it is within reach. It is preferable to feed timothy for the first two or three months, after which alfalfa or clover hay will give better satisfaction.

379,312 SQUARE MILES FREED FROM INJURIOUS CATTLE TICK SINCE 1906



849,253 SQUARE MILES IN BLACK STILL IS TICK INFESTED. DIP THAT TICK AND LET THE ENTIRE SOUTH ENTER THE FREE-CATTLE AREA OF THE NATION.

(Prepared by the United States Department of Agriculture.)

The white area below the heavy line shows where the people have dipped out this deadly blood-sucking parasite and freed their states or counties from federal quarantine. California, which also freed itself of the tick, is not shown on the map

GOOD SEEDBED FOR ALFALFA

Preparations Should Begin Year Before Planting—Keep Soil Well Cultivated.

(By M. A. BEESON, Oklahoma Experimental Station.)

In preparing the seed bed for alfalfa you should begin a year or two before you wish to seed by planting a cultivated crop, keeping the ground well cultivated and free from weeds. Corn is a good crop to precede alfalfa.

The critical period of alfalfa is the first six weeks of the life of the plant. The ground should be plowed early and deep. It should be free from weeds and as free as possible from weed seed. It should be well tilled, but firm up to the surface when seeded. Fall seeding in September without a nurse crop is considered the surest method to follow. However, if there is not a favorable season and sufficient moisture in the fall, you may sow at corn or cotton planting time in the spring. From 12 to 15 pounds of seed per acre is ample if the seed is clean and strong.

When it is sown with a grain drill attachment, on well-prepared seed bed, and when sown carefully and not too deep, from 10 to 12 pounds of seed is quite sufficient. The seed is small and does not need to be sown too deep—just so you get it into the moist dirt.

WHERE MANURE YIELDS MOST

Greatest Profits May Be Expected Where Fertilizer Is Placed on Poorest Soils.

Greatest profits may be expected from a ton of manure when it is used on the poorest soil on the farm.

The value of a ton of manure when used on soils of different fertility is illustrated by two series of plots at the Ohio experiment station. Corn without any fertilizer or manure has yielded 48.07 bushels per acre for 12 years in a rotation of corn, oats and clover. In another series not more than 40 rods away, the yield of corn for 19 years has averaged only 35.17 bushels, the other crops of the rotation being wheat and clover. Originally the land was the same, but its treatment previous to the time these experiments began made this difference in fertility.

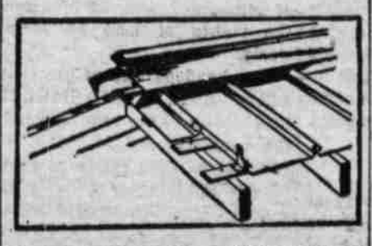
Eight tons of barnyard manure with 320 pounds of raw phosphate rock per acre has produced an increase in corn yield of 30.98 bushels on the poorer soil. On the rich land the same application with 1,000 pounds of raw phosphate rock has increased the corn crop only 17.89 bushels per acre, even though three times as much of the phosphorus carrier was added. The total yield on the manure land has been nearly the same in both cases.

METAL SHEETING FOR ROOFS

Arranged to Enable Tinsmith to Rapidly Join Sheets Without the Use of Solder.

The Scientific American, in illustrating and describing a metal roof invented by J. H. Perry of Middletown, N. Y., says:

"The object of this invention is to provide a sheet metal roof arranged to enable a tinsmith or other person to rapidly join the metal sheets for forming the roof-sides and the ridge without the use of solder and, to render the joints rainproof and thereby prevent



Sectional Perspective View of Sheet Metal Roof With Parts Broken Away.

leakage, use is made of metal sheets provided at each side with an upturned abutting member terminating in an inward and downwardly bent flange and a peak-shaped seam cap fitting over the flanges.

STRAW IS WASTED ON FARMS

One of Feeds Ordinarily Thrown Away or Permitted to Rot in Pile Where Threshed.

One of the feeds ordinarily thrown away is straw, which is wasted or permitted to rot in the straw pile where threshed. The average straw crop from the small grain harvest, when properly taken care of, stacked and protected until fed out, will help wonderfully in the wintering of horses, cattle and sheep. Straw should be fed in racks arranged so it can be forked down to the stock fresh every day, and the left-over and refused stuff thrown out for bedding. Feed sparingly each day, and what salt is given may be put on the straw as light brine, just enough to carry a slight salty taste; this will add to the palatable quality of the feed and induce it to be freely taken up by all fodder-eating animals.

SAVING SEED IS PROFITABLE

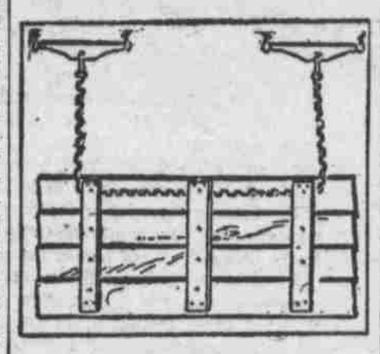
Zeal and Labor Spent in Cultivation Will Not Make Up for Lack of Foresight.

If you neglected to insure plenty of high quality seeds for next year's planting all the zeal and labor you may spend in cultivation will not make up for lack of foresight in saving the good seed.

PLANK DRAG COMES IN HANDY

Useful in Leveling Plowed Ground and Breaking Clods—Boards Held Together by Bolts.

This plank drag comes in handy for leveling plowed ground and breaking clods. It is 8 feet long and made of five 1½-inch boards, 8 inches wide, writes Charles Schroeder in Oklahoma Farmer. The boards overlap one another a little just as shown, and they



Handy Plank Drag.

are held together by being bolted, and by nailing on the scantlings as shown in the drawing. A chain is passed around under the front end of the scantlings with the single-trees at the other end to hitch on the team.

USE SWEET CLOVER FOR PIGS

Ordinarily an Acre of Crop Will Support Twenty to Thirty Shoats—Other Uses for Weed.

An acre of sweet clover ordinarily will support 20 to 30 shoats. Many other uses for this erstwhile weed are told in Farmers' Bulletin No. 820, published by the United States department of agriculture, Washington.

Stock may refuse to eat sweet clover at first, but if they are kept on the field for a few days they will soon develop a liking for it. It will furnish as much pasture during the season as any other legume, with the possible exception of alfalfa.

Sweet clover also makes a first-class hay if it is cut before it gets too coarse, and it is a remarkable soil-builder. It is one of the best honey plants because of the large amount of nectar it produces. Beekeepers would do well to plant at least a small patch of it solely for honey purposes.

HIGHWAY ON PACIFIC COAST

Dream Is for Macadamized, Asphalt-Surfaced Road From Alaska South to Panama.

Good road advocates should turn their eyes upon the Pacific coast states, where their hobby is reaching a development nowhere else approximated in the United States. The dream of the Pacific coast is for a macadamized, asphalt-surfaced highway from Alaska south to the Panama canal. The realization of the project so far is the actual voting by the state of California of a bond issue of $18,000,000,000 and by the public interest aroused in Oregon, Washington and British Columbia, which promises early legislation for the continuation of the California highway.

JOB FOR FIRST STORMY DAY

Reduce Loss of Young Animals by Infectious Diseases by Cleaning Stables Thoroughly.

A good job for the first rainy day.

From 6 to 10 per cent of the young animals are lost each year from such infectious diseases as calf scours, hog cholera, blackleg, contagious abortion, navel ill of sucklings, distemper and other infectious diseases.

Reduce this loss of young animals from infectious diseases by cleaning the stable thoroughly and disinfecting with whitewash to which has been added 2 per cent crude carbolic acid or 5 per cent coal-tar dip. This is easily applied to the walls, ceiling and floors with a spray pump.

LAYING CONCRETE IN WINTER

Such Indoor Work as Cellar Floors and Barn Floors May Be Successfully Performed.

Indoor concrete work such as cellar floors and barn floors under cover, may be done successfully in winter, if proper precaution is taken to keep the concrete from freezing. Fence posts and concrete blocks may be made successfully indoors during the winter, but outdoor work in concrete is not advisable after the temperature is below 45 degrees. If you have some outside concrete work to do in cold weather, you must keep the concrete from freezing by heating the ingredients, using warm water and covering so they will not freeze.

PROTEIN SUPPLY FOR FOWLS

When Closely Confined Chickens Will Need Some Kind of Meat—Grain Is Not Enough.

Fowls confined in close pens, yards or runs where they have little chance to get insects will need some kind of meat. Grain will not supply enough protein and mineral matter for best results.

To supply this demand for protein and mineral matter meat meal, meat scrap or tankage is generally fed. Laying hens especially need some of these forms of feed. Young chickens will thrive better if fed meat in some form occasionally.

WEEVIL IN BEANS AND PEAS

Eggs of Insects Are Easily Destroyed by Fumigation and Bisulphide of Carbon.

The weevil which makes the buggy beans and peas lays its eggs in the maturing beans and peas in the pod during the late summer. The eggs are not recognized by the naked eye, and they do not generally hatch until some time after harvest. The eggs are easily and quickly destroyed by fumigation and bisulphide of carbon, without injury to the beans or peas.

Place the beans or peas in an air-tight vessel—a stone crock, a barrel, box or bin. Place a shallow dish on top of the beans, and in this pour a quantity of bisulphide of carbon, which is a heavy, colorless liquid, having a vile smell. The fumes are heavy and will quickly sink through the mass to the bottom. They are explosive, so one must be careful not to bring a light in contact with them.

Cover the vessel quickly and leave it for 24 hours. A tablespoonful will be enough to fumigate the contents of a five-gallon jar and one ounce is enough for two bushels. All beans and peas should be treated in this way, after which they can be kept for an indefinite period without injury.

SOIL PLANT FOODS REMOVED

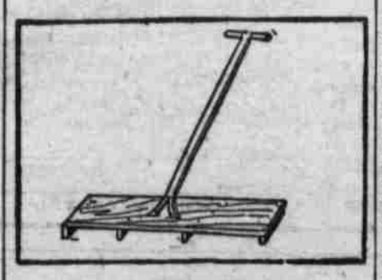
Experiments Add Valuable Information for Farmer in Use of Commercial Fertilizer.

A great many experiments, carefully controlled, have been made to determine the amount of soil plant food removed by crops, and while in a general way they are more interesting than practically instructing for the average farmer, yet they add valuable information along the line of the use of commercial fertilizers. The results obtained from the corn experiments show an average use by full crops of 89 pounds of nitrogen, 38 pounds of phosphoric acid, and 78 4-10 pounds of potash. The husking corn uses more nitrogen in proportion than the ensilage corn, but this is no doubt due to the prolonged feeding season, developing and ripening the ears, the ensilage being cut in green stage. There is, however, quite a wide range shown in some of the tests, which is apparently due to the greater availability of the soil ingredients. For instance, in full crops of both ensilage and husking corn its potash has been shown varying from 60 to 100 pounds to the acre of crops, while the nitrogen and phosphoric acid maintain their level average.

HANDY LITTLE SEED MARKER

Implement Will Be Found of Great Convenience in Garden—Straight Lines Essential.

The little seed marker shown in the illustration will be found very useful in garden work. The markers which should be in the form of sled runners are placed 12 inches apart, an extra set of lines can be run through the first. It is important to have perfectly straight lines for planting all garden stuff in order to save ground, to say



Handy Seed Marker.

nothing of the good appearance of the garden, and this can be accomplished in no other way except by the use of a marker. In drawing the first line the ground should be squared up accurately and a string stretched at one side as a guide for the marker. It is a good plan to use a line for all other marks as well, setting it exactly 18 inches from the last mark.

TO ERADICATE QUACK GRASS

Small Patches Can Be Covered With Tar Paper or Forked Out—Follow Disk With Harrow.

The following will eradicate quack grass:

For small patches cover with tar paper or fork it out. For a large area first mow it, then plow it under and disk about once a week till fall. Sometimes it pays to follow the disk with the harrow. It will sometimes be found necessary to plow it again at the end of the season. Corn is a good crop to put on this land the following year. If there are any stray plants they can be dug out.

TROUBLE IN FINDING LABOR

Whole Proposition Should Be Studied by Farmer in Winter With View to Economizing.

Some crops require much more labor than others and this factor should be considered by growers who have difficulty in finding labor. The small, quick-perishing crops, such as radishes and lettuce, require much more labor than others like cabbage, sweet corn and cucumbers. The whole proposition should be studied carefully during the winter months with a view to economizing in the employment of labor and utilizing labor to the very best advantage.

KILL OUT CANADIAN THISTLE

Weeds Are Difficult to Eradicate, as They Have Underground Stems—Mow and Plow.

Canadian thistle and sow thistle are hard to kill, as they have underground stems from which new plants are sent up. A piece of this stem if cut off and given the right conditions will form a new plant. The first step in the eradi-

Canada Thistle.

cation is to mow the plants, then plow them under and disk the land as often as new shoots appear. Keeping the top from growing will in time kill the roots and underground stems. Growing a crop of corn in hills and cultivating thoroughly both ways and hand-hoeing the hills is another way of eradication. Getting rid of the patches of Canada thistle and sow thistle now will save a lot of work a little later.

MOST EFFECTIVE ROAD TOOL

Drag Can Be Used in Maintaining Public Highways—They Are Easily and Cheaply Made.

The most effective tool which can be used in the maintenance of earth roads is the road drag. The first drags were made more than 50 years ago, but it is only during the last few years that they have come into general use. They are easily and cheaply made, easily operated and accomplish wonders if properly used. Every mile of earth road in the state of Texas should be maintained with a drag, and if the time and money wasted under the present system of "working the roads" (this does not mean that all time and money so spent are wasted) were used in dragging the roads, our states would have some of the best earth roads in America.

GROW LARGE CROPS OF OATS

Farmer Should Provide Feed for Horses, Sheep, Cows and Other Stock—Plan Is Outlined.

The farmer who raises horses and sheep, feeds dairy cows and fattens beef cattle, annually should grow large crops of oats. They should get ripe enough to be cut and bound by the binder, so when dried out in the shock the sheaves will not mold when stored in the barn. These things attended to, with some kind of power and a modern straw cutter in the barn, the entire crop, as needed, should be cut up quite fine and fed. Fed in this way, the stock eats up almost all the straw, and the grain entire.

DRESSED WEIGHT OF SWINE

Shown by Experiments That Animals Average 76.44 Per Cent Fasted Live Weight.

A number of experiments have shown that the dressed weight of hogs is on an average of 76.44 per cent fasted live weight.

When hogs are fed corn or other concentrated fat-producing feeds the dressed weight may be 80 per cent of the live weight. On this estimate the blood constitutes 2.5 to 3 per cent of the live weight; the liver, 1.3 to 1.5 per cent; heart, 2 per cent; stomach and contents, 4.5 to 5 per cent; intestines, 6.5 to 8 per cent; kidneys, 3 per cent; spleen, 1 per cent; intestinal fat, 1 to 2 per cent; kidney fat, 4 to 4.5 per cent.

PREPARING NOW FOR SPRING

Winter Is Good Time to Rig Up Several Three and Four-Horse Eveners on Implements.

In view of the probable shortage of farm labor next spring, now is a timely occasion to rig up several three and four-horse eveners to be used on the farm implements. One man with a four-horse team will do almost as much work in preparing the spring seedbed as two men, each using a two-horse team.

RAPID INCREASE IN ALFALFA

Has Resulted in More Careful Study of Its Possibilities as Food for All Farm Animals.

The rapid increase in the production of alfalfa in the United States during recent years has resulted in a more careful study of its possibilities as a food for all classes of live stock. Formerly it was used primarily as a cattle feed, but now it is used as a feed for horses, swine and she—